

REMARKS/ARGUMENTS

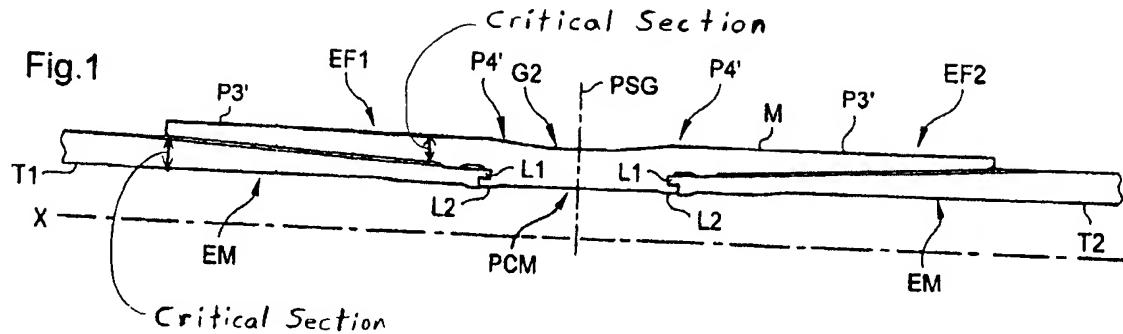
Favorable reconsideration of this application, in light of the present amendments and following discussion, is respectfully requested.

Claims 1-3, 5-13 and 15-23 are pending. Claims 18 and 19 are withdrawn. Claims 1, 5, and 18 are amended. Claim 4 is canceled by the present amendment. Claim 14 was canceled previously. Support for the amendments to Claims 1 and 18 can be found in the published application in numbered paragraph [0066] (page 11, lines 15-18, for example (see also Fig. 1 with reference to (G2)). No new matter is added.

In the outstanding Office Action, a summary of the Examiner's understanding of the term "critical section" was provided. Claims 1, 6-11, 15-17, 22, and 23 were rejected under 35 U.S.C. § 103(a) as obvious over Verger et al. (WO 03/060370, herein "Verger") in view of Matsuki (U.S. Patent No. 3,870,351). Claims 2-5, 20, and 21 were rejected under 35 U.S.C. § 103(a) as obvious over Verger, Matsuki, and Metcalfe (WO 98/42947). Claims 12 and 13 were rejected under 35 U.S.C. § 103(a) as obvious over Verger, Matsuki, and Klementich (U.S. Patent No, 5,462,315).

As an initial matter, Applicants note that the term "critical section," the figure included in the outstanding Office Action is somewhat inaccurate. The critical sections are the maximum thickness of either the male or female threaded areas, taken at the last engaged thread on either the left or right end of the made up threaded connection.¹ An annotated copy of Fig. 1 from the present application is provided below for clarification.

¹ This term in the art is also sometimes phrased as a "critical area." For example, U.S. Pat. Pub. 2001/0001219 defines the critical areas in paragraphs [0013] and [0014].



The critical section on the male member is the “pin” critical section. The critical section on the female member is the “box” critical section. Thus, the annotated figure above shows two different critical sections.

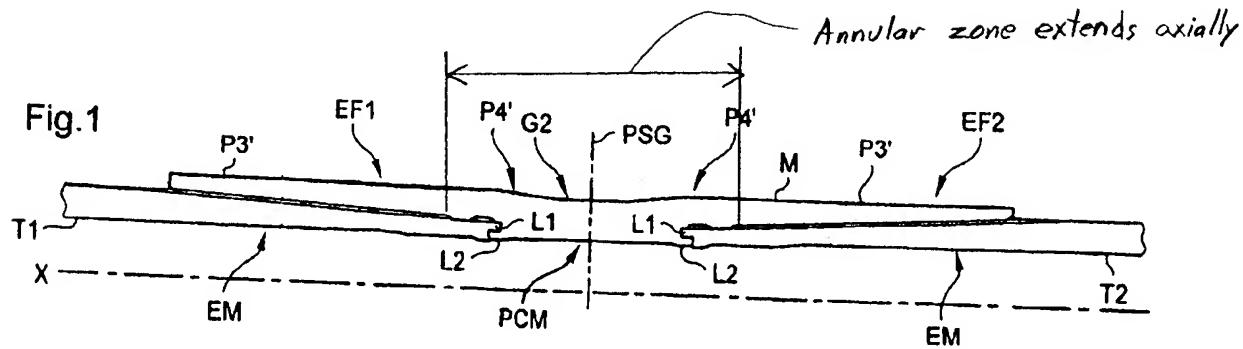
Regarding the rejection of Claim 1 as obvious over Verger in view of Matsuki, that rejection is respectfully traversed by the present response.

Amended independent Claim 1 recites, in part:

wherein the annular zone extends, axially, from an innermost end of the female thread on a first of the two opposing ends of the female/female connection sleeve to an innermost end of the female thread on a second of the two opposing ends of the female/female connection sleeve,

wherein the assembly is configured to develop, after diametral expansion in the plastic deformation region, sealing interference contacts sealing the assembly, and the first and second tubular elements will be sealed with respect to a pressure difference between the inside and outside of the first and second tubular elements.

Thus, the annular zone (which has a reduced thickness) extends axially. The annular zone extends from one the innermost part of one of the female threads to the innermost part of the other of the female threads. One non-limiting example of the above-noted arrangement is shown below in annotated Fig. 1 from the present application, in which (G2) is the recited annular zone.



The outstanding Office Action acknowledges that Verger does not disclose the above-noted annular zone having an initial reduced thickness and relies on Matsuki for this feature.²

Applicants respectfully note that Matsuki fails to disclose the above-noted feature wherein the annular zone extends from female thread to the other. Rather, as shown in Fig. 1 of Matsuki, Matsuki does not disclose an annular zone as recited in amended independent Claim 1, much less such a zone extending from one of the female threads as defined in Claim 1 to the other of the female. Accordingly, no reasonable combination of Verger and Matsuki would include all of the features recited in amended independent Claim 1.

Metcalfe fails to remedy the deficiencies discussed above regarding Verger and Matsuki. Rather, to the extent Metcalfe discloses any annular area of reduced thickness, this area does not extend from an inner end of one of the female threads to an inner end of the other of the female threads as recited in amended independent Claim 1.

Klementich relates to a single connection and therefore does not disclose the above-noted female/female connection, much less the annular area of reduced thickness extending from one female thread to another. Thus, Klementich fails to remedy the deficiencies of Verger, Matsuki, and Metcalfe. Accordingly, no reasonable combination of Verger, Matsuki, Metcalfe, and Klementich would include all of the features recited in amended independent Claim 1 or any of the claims depending therefrom.

² Outstanding Office Action, page 7.

Further Matsuki is not pertinent to the present claims. Matsuki describes a female sleeve of constant diameter over the time. The sleeve in Matsuki is not an **expandable** joint as a person of ordinary skill in the art would understand the term "expandable joint." In fact, expandable joints were not known at the time Matsuki was developed. Expandable joints appeared years later. The teaching of a non-expandable joint cannot be transferred to an expandable joint because numerous parameters would have to be redesigned. The intentional deformation of a joint according to Matsuki is unknown and would likely have been detrimental to its design. Both abutment and sealing surfaces would likely lose contact if the device of Matsuki was expanded.

The sleeve of Matsuki has an outer surface of constant diameter. As noted above, there is neither initial thickness, nor reduced thickness. Applicants note that Claim 1 recites an annular zone having an initial "reduced thickness." The thickness of the "annular zone" is reduced with regard to other zones of the sleeve, according to pending Claim 1.

A further recitation of Claim 1 is that the "reduced thickness" is "selected such that ... greater than or equal...". In the device of Matsuki, there is no possibility of comparison between a reduced thickness zone and the critical section of the threaded elements.

Additionally, Matsuki does not teach a joint having a lip on the female element. There is neither a female lip, nor second abutment surface of the male element, nor third and fourth abutment surfaces on the female element (only one), nor an outer surface on the female element, nor an inner surface on the female element. Accordingly, any reasonable combination of Matsuki with Verger would not have resulted in the features recited in amended independent Claim 1 or any of the claims depending therefrom.

Page 17 of the Office Action discusses the combination of Verger and Matsuki newly raised. The Office Action asserts that the patentability of a product does not depend on the patentability of the manufacturing process. However, in the art of expandable joints, the

initial assembly is a product and the expanded assembly are not merely linked via a process, they are structurally defined in terms of each other. The initial assembly has geometrical features selected to obtain a predetermined result after expansion. In other words, these are structural features of the recited joint, not process features.

The Office Action discusses the combination of Verger and Metcalfe beginning on page 12.

Amended independent Claim 1 now recites "An assembly of two **fluid tight** expandable threaded tubular joints."

Metcalfe is directed to a sand **filter** in which the joints do not need to be fluid tight. The feature of amended Claim 1: "reduced thickness selected such that the initial section of said sleeve in the region of this zone is greater than or equal to the smallest of the critical sections of the threaded elements" is structurally linked to the tightness of the joint. The features recited in Claim 1 are configured to control the deformation of the abutment surfaces and of the seals during expansion, see page 9, line 21 – page 10, line 28 of the specification. Since Metcalfe is directed to a sand filter in which the joints do not need to be fluid tight, a person of ordinary skill in the art would have had no apparent reason to modify Verger in view of Metcalfe to produce a fluid tight assembly. Accordingly, no reasonable combination of Verger and Metcalfe would include all of the features of amended independent Claim 1 or any of the claims depending therefrom.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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